Appendix A

Study Plan

Facilities Cost Report

Study Plan

Generation Interconnection

GWF Power Systems

Henrietta Peaking Plant

Revision 2

Pacific Gas and Electric Company

May 16, 2001

Table of Contents

Introduction

At the request of GWF Power Systems (Applicant), Pacific Gas & Electric (PG&E) will perform a Facilities Cost Report (FCR) for the proposed Henrietta Peaking Plant (Project). The FCR will provide:

1) The facilities necessary to interconnect these generators to the grid,

2) A further evaluation of the transmission system impacts caused by the addition of the Project, if required.

3) The system reinforcement necessary to mitigate the adverse impact of the projects under various system conditions, if any.

This Study Plan will form the basis for the Facilities Cost Report Agreement by defining the scope, content, assumptions, and terms of reference of the FCR.

Study Fee

A one-time study fee for performing the FCR is $30,000. If the Applicant chooses not to continue with the FCR after receiving this Study Plan, a fee of $2,500 shall be assessed to reimburse PG&E the cost of processing the Study Request.[1]

Schedule

The following schedule shows the milestones associated with the FCR.

Task	Milestone Description	Target Date
1	Establish study commencement date based on receipt of study fee	4/18/01
2	Send draft report to Applicant and CAISO for review and comments	6/14/01
3	Receive comments from Applicant and CAISO	6/21/01
4	Issue Final FCR	6/29/01

PG&E must receive a completed Facilities Cost Report Agreement (FCRA) from the Applicant (including the study fee) by April 18, 2001. If PG&E does not receive the completed FCRA and study fee by this date, the Interconnection Application will be considered as withdrawn and the Applicant's position in the generation interconnection queue shall be lost.

Cost Estimates

The following cost estimates will be provided, based upon an interconnection operation date in Summer 2002:

[1] Refer to PG&E's Transmission Owner Tariff TO4 Terms and Conditions.

- A decision quality cost estimate[2] for PG&E to interconnect the Project to the PG&E transmission grid will be provided. This estimate includes any substation and transmission line facilities required to interconnect the proposed generation project. The estimate will not include any facilities constructed, owned and operated by the Applicant.

- A preliminary cost estimate[3] of transmission reliability upgrades needed to mitigate any system impacts to PG&E's existing facilities that are caused solely by the interconnection of the Project's new facility will be provided.

Charges will be made based upon the actual costs incurred. All costs will be provided as estimates only.

Project Information & Interconnection Plan

The GWF Henrietta Peaking Plant is located Adjacent to Henrietta Substation at 25th Avenue, south of Highway 198 in Lemoore, California. Figure 1 provides an overview of the vicinity of the proposed projects as well as the transmission facilities in the area.

[2] A PG&E decision quality cost estimate is developed with a theoretical confidence level of 25%.
[3] A PG&E preliminary estimate is developed with a theoretical confidence level of 50%.

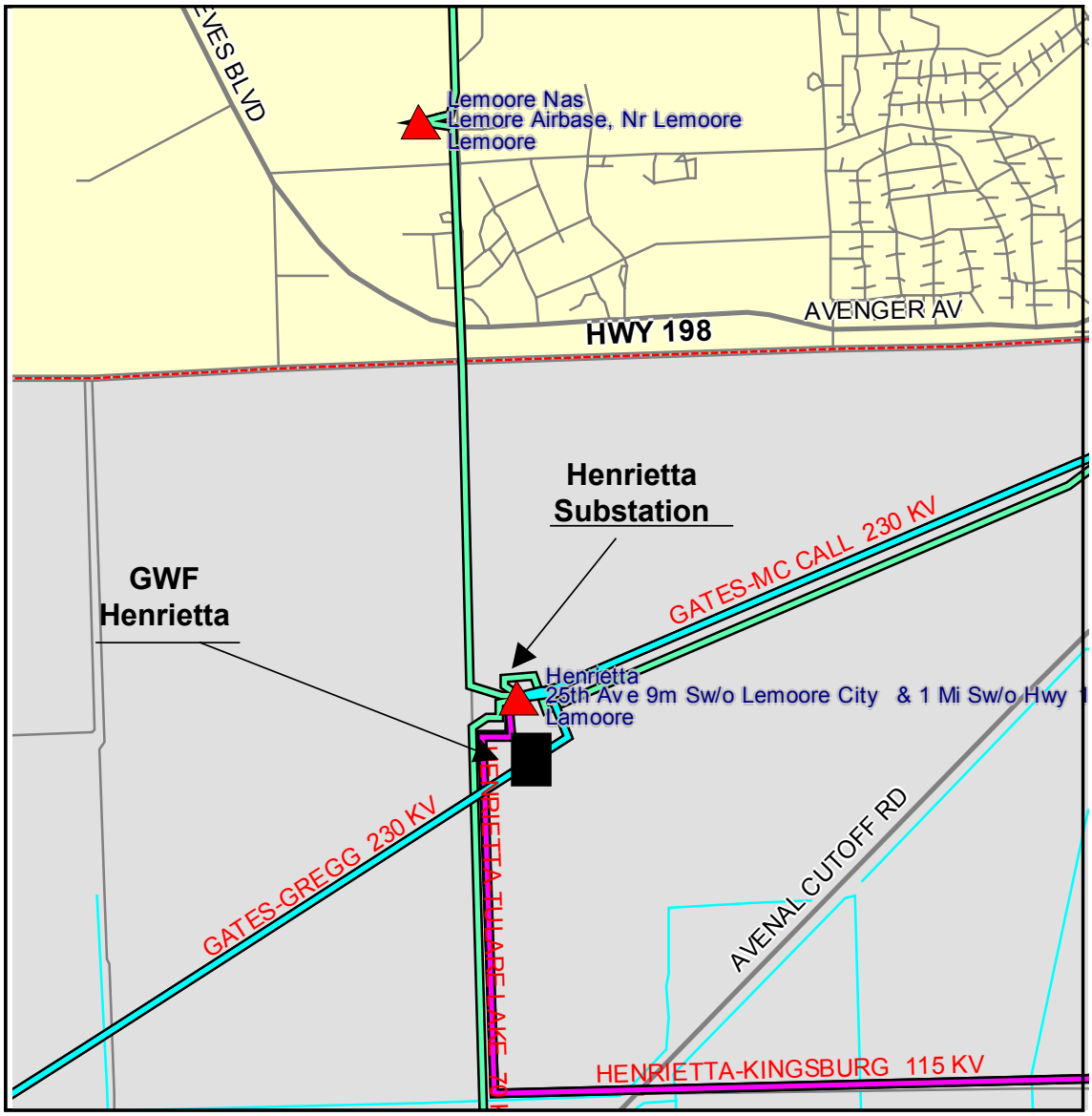

Figure 1: Vicinity Map

The Project will have a maximum output of 95.8 MW to PG&E's grid. The project will consist of two (2) combustion/turbine generators (CTG) rated 71.2 MVA (nominal) each. The power factor range of these units is 85% (lag) to 95% (lead). Each CTG will have its own 13.8/70 kV step-up transformer.

The Henrietta Peaking Plant will be connected to PG&E's system via an express line connecting directly to PG&E's Henrietta Substation 70 kV bus. The express line is assumed to be approximately 1000 feet.

A single-line diagram for the Project is shown in Figure 2.

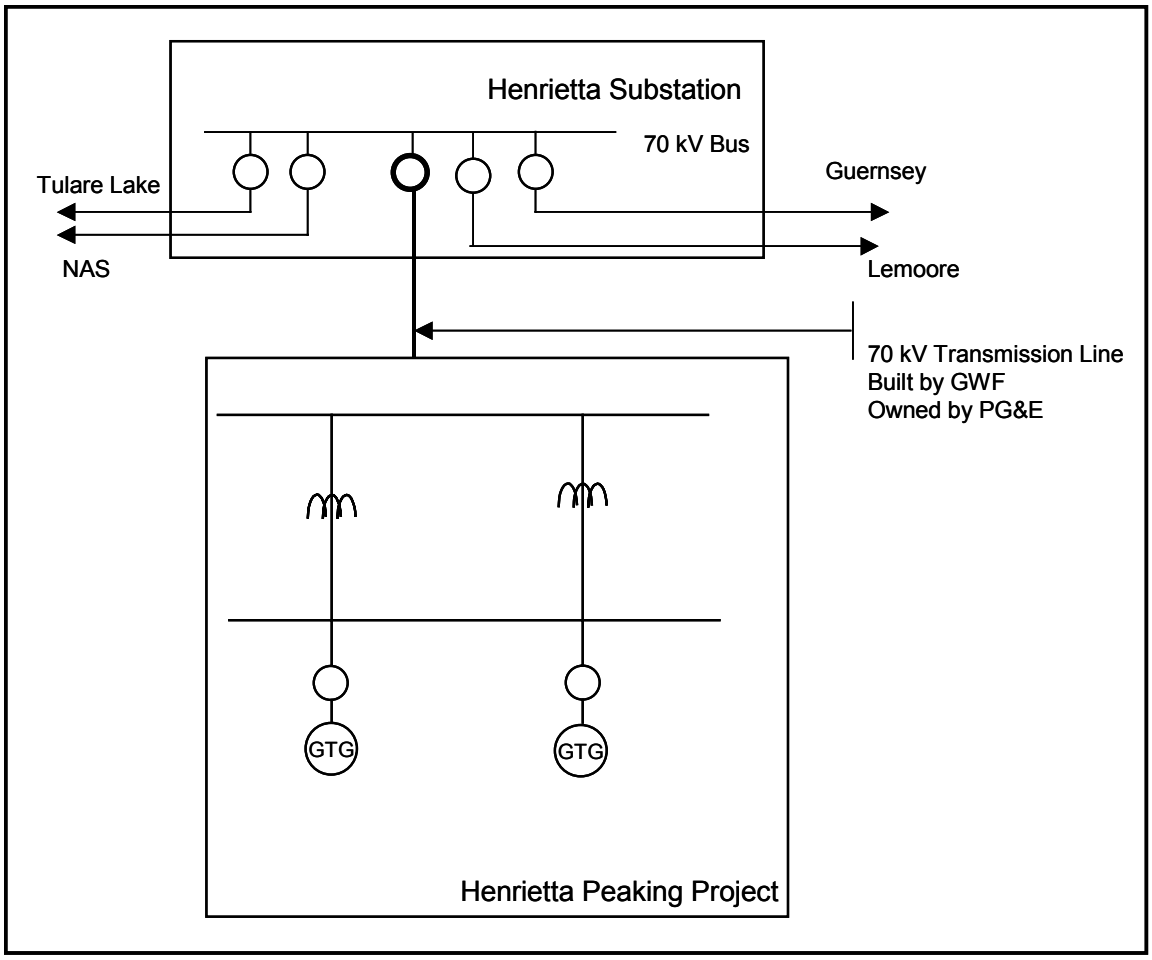

Figure 2: Single Line Diagram

Study Assumptions[4]

PG&E will conduct the FCR using the following assumptions:

1) The gross MW output from the Project to the PG&E transmission grid will be 95.8 MW.

2) The project will be on line in June 2002.

3) GWF Hanford 96 MW generation project will be connected to the Henrietta – Kingsburg 115 kV circuit.

Study Scope

The following studies will be conducted for the FCR:

[4] Study assumptions must be review and approved by Applicant prior to commencing with the FCR.

Steady State Power Flow Studies

The FCR will investigate the system reinforcements needed, if any, to mitigate normal system overloads and emergency thermal overload and voltage problems caused by the proposed Project. The 2002 Summer Full Loop Base Case and relevant 2003 Spring Full Loop Base Case will be used to simulate the impact of the new facility during the following:

a) Normal operating conditions.

b) Selected N-1 outages in close proximity to the Project. Between five and ten outages will be selected based upon PG&E's knowledge of the area.

Post Transient Power Flow Studies

A post transient study will be performed on any outages that cause greater than 5% bus voltage drops as indicated in the power flow analysis.

Dynamic Stability Study

Dynamic stability study will be conducted using 2002 Summer Full Loop Base Case to determine if the addition of the Project would result in any adverse impact on system stability. Disturbance simulations will be performed for a study period of 20 seconds to determine whether the new facility will create any system instability during the following line and generator outages:

NERC/CAISO Category "B" Contingencies:

a) Full load rejection of the proposed 95.8 MW facility.

A three-phase fault with normal clearing time at:

b) The GWF Henrietta Peaking Plant 70 kV bus followed by the loss of the Guernsey – Henrietta 70 kV Circuit.

c) The GWF Henrietta Peaking Plant 70 kV bus followed by the loss of the Henrietta – Lemoore 70 kV Circuit.

d) The GWF Henrietta Peaking Plant 70 kV bus followed by the loss of the Henrietta 230/70 kV Transformer Bank #2.

NERC/CAISO Category "C" Contingencies:

A three-phase fault with normal clearing time at:

e) The Henrietta Substation 70 kV bus.

Post Transient Analysis

Post transient study will be performed on outages that cause greater than 5% bus voltage drops as indicated in the power flow analysis.

Transmission Line Evaluation

The Transmission Line evaluation will identify new facilities required to interconnect the Project with the transmission grid. Costs and a scope of work will be provided.

Substation Evaluation

The Substation evaluation will identify new protection requirements together with protection modification at the nearby transmission substations. Costs and a scope of work will be provided.

Land Evaluation

PG&E's land department will perform an evaluation to determine if any new land rights are necessary to install new facilities that might be required by the interconnection.

Environmental Evaluation

The Applicant will be responsible for including any new facilities required for interconnecting the Project to PG&E's transmission grid that are built and owned by PG&E when the Applicant files for the local permit application. PG&E will provide routing and design information to support this filing. PG&E will not be responsible for obtaining any permitting to build the interconnection facilities.

Permitting

The Applicant will be responsible for including work at all new and existing transmission facilities as part of the project's Application For Certification (AFC) filing to the California Energy Commission (CEC). PG&E will not apply for any permits from the CPUC for any interconnection work. PG&E will submit an advice letter to CPCU in the form of a Notice of Construction (NOC), as required by General Order (GO) 131-D. The environmental impact component of these substation and transmission line work will be addressed in a broader-scope California Environmental Quality Act (CEQA) analysis that is part of the project's AFC filing.

Stand-by Power

This study does not address any requirements for stand-by power that the project may require. The Applicant should contact their local PG&E service office regarding this service.

Note: The developer is urged to contact their local service office promptly regarding stand-

by service in order to ensure its availability for the project's start-up date.